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Atty Docket No.: ORCL.P0070C
Serial No.: 10/720,534

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Gregory Suh

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In the Application of:

Kavi Mahesh

Serial No.: 10/720,534

Filing Date: 11/24/2003

For: **AUTOMATED INTEGRATION OF TERMINOLOGICAL INFORMATION INTO A KNOWLEDGE BASE**

Examiner: Starks, Wilbert

Group Art Unit: 2129

TRANSMITTAL LETTER FOR AMENDED APPEAL BRIEF

Mail Stop Appeal Brief-Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In support of applicants' appeal to the Board of Patent Appeals and Interferences, attached please find:

1. Amended Appeal Brief (26 pages); and

2. Return Postcard.

The Commissioner is hereby authorized to charge any additional fees under 37 C.F.R. §§ 1.16 and 1.17 that may be required by this transmittal and associated documents, or to credit any overpayment to **Deposit Account No. 50-1128** referencing ORCL.P0070C.

Respectfully submitted,

Dated: December 7, 2006 By: _____

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AMENDED APPEAL BRIEF

Mail Stop: Appeal Brief - Patents
Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is an Amended Appeal Brief from the final rejection of claims 16-34 in the above-referenced application. No fee for an appeal brief is due. Please charge any fees or credit any overpayment to Deposit Account No. 50-1128 referencing ORCL.P0070C.

I. REAL PARTY IN INTEREST

The real party in interest to this Appeal is Oracle International Corporation, a Delaware Corporation, having its principal place of business in Redwood Shores, California.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences known to appellant, the appellant's legal

representative, or assignees thereof.

III. STATUS OF CLAIMS

Claims 16-34 are pending in the present application. The Examiner has rejected claims 16-34 in a Final Office Action dated 1/12/2005. Applicant hereby appeals the rejection of claims 16-34. All pending claims 16-34 are copied in attached Appendix A.

Claims 1-15 have been canceled.

Claims 16-34 are rejected.

Claims 16-34 are being appealed.

IV. STATUS OF AMENDMENTS

An Amendment after the Final Office Action of 1/12/2005 was submitted on 5/3/2005. The Amendment was recognized in an Advisory Action dated 6/1/2005 but was denied entry.

V. SUMMARY OF INVENTION

Independent claims 16, 17, and 26 recite elements for automated integration of terminological information into a knowledge base. A computer stores a knowledge base. (Specification, page 7, lines 13-15, Specification, page 27, lines 13-15, Drawings, knowledge base 155, Figure 1, and Drawings, Built-in Knowledge Base, Figure 8). The knowledge base consists of a plurality of nodes. Each node represents a term, and the nodes are arranged to depict relationships among the terms. (Specification, page 3, lines 16-19, and Drawings, Figure 2).

Independent claim 16 is a computer implemented method that recites limitations to automatedly integrate input terminology into the knowledge base. In accordance with the limitations of claim 16, the method receives a plurality of input terms and information that specifies

relationships among the input terms. (Specification, page 3, lines 19 – 22 and Drawings, Figure 1, Input Terminological Information 110). The input terms and information are parsed to generate a logical structure. The logical structure depicts linguistic relationships among the input terms in a format compatible with the knowledge base. (Specification, page 3, line 22 – page 4, line 2). The method further determines whether the input terms exist as nodes in the knowledge base (*i.e.*, the term designated as a node in the knowledge base is the same as the input term). If none of the input terms match an existing node in the knowledge base, then the claimed invention generates an independent ontology that consists of the logical structure previously generated for the input terms. Alternatively, if the input terms do match an existing node in the knowledge base, then the knowledge base is extended by coupling the logical structure, previously generated for the input terms, to the node that matches the input term. (Specification, page 4, line 2 – page 4, line 10, Specification, page 18, line 17 - page 20, line 6, Drawings, Figures 5 & 6).

Independent claim 17 is also a computer implemented method that recites limitations to automatedly integrate input terminology into the knowledge base. In accordance with the limitations of claim 17, the method receives a plurality of input terms and information that specifies relationships among the input terms. (Specification, page 3, lines 19 – 22 and Drawings, Figure 1, Input Terminological Information 110). A mapping of the relationship information is stored, the mapping being in a format compatible with relationships depicted in the knowledge base. (Specification, page 18, line 17 to page 19, line 6 and Drawings, Figure 4). A logical structure is generated from the relationship information, the input terms, and the mapping (that depicts relationships among the input terms). (Specification, page 19, line 7 to page 20, line 7 and Drawings, Figure 5). The method then integrates the logical structure of the input terms into the knowledge

base. (Specification, page 4, line 2 – page 4, line 10, Specification, page 18, line 17 - page 20, line 6, Drawings, Figures 5 & 6).

Independent claim 26 is a computer readable medium claim reciting limitations similar to computer implemented method claim 17.

VI. GROUNDS OF REJECTIONS TO BE REVIEWED ON APPEAL

A. Do claims 16-34 recite statutory subject matter under 35 U.S.C. § 101 and produce a "useful, concrete and tangible" result to have a practical application?

B. Are claims 16-34 properly rejected under 35 USC § 112, First Paragraph, due to the specification not enabling a person skilled in the art to make and use the invention?

C. Is claim 16 properly rejected under 35 U.S.C. § 101 based on double patenting grounds in regards to claim 1 of US Patent 6,654,731?

VII. ARGUMENT

The Examiner erred in rejecting the claimed invention by concluding that 1) the claims recite non-statutory subject matter; 2) the specification is non-enabling; and 3) claim 16 comprises the same invention and thus constitutes double patenting of claim 1 of US Patent 6,654,731.

A. The Claims Recite Statutory Subject Matter Under 35 U.S.C. 101.

In rejecting the claims for being directed to non-statutory subject matter, the Examiner argues that the claims are not limited to practical applications in the technological arts. The Examiner argues, in part, that the claims recite manipulation of abstract "terminological information" and do not produce a "useful, concrete and tangible" result to have a practical application.

1. The Claimed Invention Recites Statutory Subject Matter To Automatedly Integrate Terminological Information Into A Knowledge Base.

In the Final Office Action of 1/12/2005, the Examiner rejected all pending claims (16-34) for

being directed to non-statutory subject matter. The Examiner relies on *In re Warmerdam* and *AT&T Corp. v. Excel Communications, Inc.* In discussing the *In re Warnerdam* opinion, the Federal Circuit, in *AT&T Corp. v. Excel Communications, Inc.*, opinion, concluded:

> Whether one agrees with the courts conclusion on the facts, the holding of the case is a straightforward application of the basic principle that mere laws of nature, natural phenomena, and abstract ideas are not within the categories of inventions and discoveries that may be patented under 101. *AT&T Corp. v. Excel Communications, Inc.* 50 USPQ2d 1147 (Fed. Cir. 1999).

It is a generally accepted principle that abstract ideas or the mere manipulation of abstract ideas are not patentable (*In re Warmerdam*, 33 F.3d at 1360, 31 USPQ2d at 1759) and that the claimed invention must accomplish a practical application that is a "useful, concrete and tangible result," (*State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02). Applicant submits that the claims of the subject application, however, are not abstract ideas or the mere manipulation of abstract ideas and accomplish a "useful, concrete and tangible result."

Claim 16 recites, "A computer implemented method for automating integration of terminological information into a knowledge base." The method includes:

> receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms;
>
> storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict ontological relationships among said nodes, each node representing a term;
>
> parsing said input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base;
>
> determining whether at least one input term exists as a node in said knowledge base;
>
> generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships if none of said input terms exist as nodes in said knowledge base; and

extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

Claim 17 recites, "A computer implemented method for automating integration of terminological information into a knowledge base." The method includes:

receiving, into a computer, input terminology information comprising a plurality of input terms and relationship information about at least two of said input terms, said relationship information specifying ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base;

generating a logical structure from said relationship information, said input terms and said mapping that depicts ontological relationships among said input terms; and

integrating said logical structure of said input terms into said knowledge base.

Independent claim 26 is a computer readable medium claim reciting limitations similar to computer implemented method claim 17.

2. The Claimed Invention Defines "Terminological Information" As Comprising A Plurality Of Input Terms And Information That Specifies Ontological Relationships Among At Least Two Input Terms.

In response to Applicant's argument in the 10/14/2004 Response to Office Action, the Examiner asserts that the claim term, "terminological information", is a term of variable and vague meaning, and rejects Applicant's examples set forth in the Specification. (1/12/05 Final Office Action, page 10). In rejecting Applicant's arguments, the Examiner noted that the "claims are to be judged by their limitations." (1/12/05 Final Office Action, page 11).

The claims in the Present Application set forth a definition for the claim term, "terminology information." Independent claims 16, 17 and 26 recite:

> input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms.

The terms used in a claim are given their ordinary meaning unless it appears from the patent that the inventor used them differently. *ZMI Corp. v. Cardiac Resuscitator Corp.*, 1844 F.2d 1576, 1578 (Fed. Cir. 1988). It is clear from the claim recitation that "terminology information" connotes terms or words and information that specifies relationships between the terms or words (*e.g.*, ontological information). As such, claims 16, 17 and 26 ascribe a clear and definite meaning to the "terminology information" claim term.

When interpreting claims, resort should be made to the claims at issue, the specification, and the prosecution history of the patent. *Id.* The Specification provides clear support for a claim interpretation that input terminology connotes terms or words and information that specifies relationships between the terms or words. Table 3 shows example input terminological information formatted in the ISO-2788 format. (*Specification*, page 20, lines 21 – 22). For the example of Table 3, the input terms are "Congress Party of India", "BJP" and "Bharatiya Janata Party." The information, which specifies relationships between terms, includes: a Broader Term ("BT") relationship between "Congress Party of India" and "politics"; a synonym (SYN") relationship between "BJP" and "Bharatiya Janata Party"; a Broader Term ("BT") relationship between "Bharatiya Janata Party" and "politics", and a related term ("RT") relationship between "Bharatiya Janata Party" and "Hinduism." Applicant is not arguing that the example is part of the claimed invention. Instead, the example provides a context for interpreting the claim limitation. As such,

Applicant respectfully contends that the claim limitation, input terminology, has a definite meaning in light of the claims recitation and specification.

3. Regardless of the Scope of the Term "Terminological Information," the Term Does Not Render the Present Claims Non-Statutory Subject Matter Per Se

The Examiner asserts that the term "terminological information" has a variable and vague meaning and include within its scope purely abstract information, such as philosophical information, mathematical information, etc. (page 5 and 11 of the Final Office Action). As such, the Examiner argues that the use of the term "terminological information" in these claims render the claims non-statutory per se since the term is an abstract construct. Specifically, the Examiner stated:

> Since the claims are not limited to exclude such abstractions, the broadest reasonable interpretation of the claim limitations includes such abstractions. Therefore the claims are impermissibly abstract under 35 U.S.C. 101 doctrine. [Page 5, paragraph 10 of the Final Office Action.]

As established by case law and as stated in the MPEP, however, the mere inclusion of a term that on its own may comprise non-statutory matter does not render the entire claim non-statutory. Rather, the claimed invention as a whole must accomplish a practical application to produce a "useful, concrete and tangible result," (*State Street*, 149 F.3d at 1373, 47 USPQ2d at 1601-02). As stated in MPEP 2106, claims define non-statutory subject matter if they:

> – consist solely of mathematical operations without some claimed practical application (i.e., executing a "mathematical algorithm"); or
> – simply manipulate abstract ideas, e.g., a bid (Schrader, 22 F.3d at 293-94, 30 USPQ2d at 145859) or a bubble hierarchy (Warmerdam, 33 F.3d at 1360, 31 USPQ2d at 1759), without some claimed practical application.
> [Emphasis added.]

MPEP 2106 further states that Examiners:

> have the burden to establish a prima facie case that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas or does not produce a useful result. Only when the claim is devoid of any limitation to a practical application in the technological arts should it be rejected under 35 U.S.C. 101. Compare *Musgrave*, 431 F.2d at 893, 167 USPQ at 289; *In re Foster*, 438 F.2d 1011, 1013, 169 USPQ 99, 101 (CCPA 1971).
>
> [Emphasis added.]

The line of analysis used by the Examiner in rejecting the claims based on inclusion of the term "terminological information" is not consistent with the established case law or the MPEP. As stated above, the Examiner states that since the term "terminological information" can include within its scope abstract information (e.g., philosophical information, mathematical information, etc.), the claims that contain the term are non-statutory subject matter per se. Using this line of reasoning, a claim for a computer application that receives and processes "information" would be non-statutory subject matter per se since the "information" may include abstract information (e.g., Pi, radians, square root, etc.). Similarly, a claim for a telecommunications system that transmits and receives "information" would also be non-statutory subject matter per se since that "information" may include such abstract information. This type of reasoning is clearly not supported by the case law or the MPEP.

In other words, simply because a claim contains a term that, recited on its own is non-statutory, does not automatically render the entire claim non-statutory as well. Applicant agrees that the term "terminological information" recited on its own with no other further limitations is non-statutory subject matter. However, the entirety of a claim must be analyzed to determine if it is non-statutory subject matter rather than a single individual term used in the claim. For purposes of determining non-statutory subject matter under 101, Applicant submits that what scope of information (e.g., philosophical information, mathematical information, etc.) is included in the term

"terminological information" is irrelevant in the present claims. Rather, in the present claims, it is the processing steps that are performed on the "terminological information" (whatever that information may or may not include) and whether these steps produce a "useful, concrete and tangible result" that is at issue.

4. The Claimed Invention Provides A Useful, Concrete and Tangible Result By Automating The Integration of Information Into A Knowledge Base

The Examiner argues that the claims provide only a manipulation of an abstract construct (terminology information) and do not produce a "useful, concrete and tangible result" (page 5-7 of the Final Office Action). The Examiner provides no support for this conclusion, but simply states that terminological information may include abstract information and then makes the conclusory statement that, therefore, the claims recite mere manipulations of abstract information (paragraphs 11 and 14 of pages 6-7 of the Final Office Action). Using the Examiner's line of reasoning to the example given above, a claim for a telecommunications system that transmits and receives information is a mere manipulation of abstract information and non-statutory subject matter since the transmitted and received information may include abstract information. Again, this type of reasoning is clearly not supported by the case law or the MPEP.

Applicant submits that the computer automated reception, analysis, and integration of new terminological information into a knowledge base stored on a computer is, on its face, a "useful, concrete and tangible result," and thus more than a mere manipulation of the terminological information. In addition, the Specification describes a useful purpose that produces a tangible result from the claimed invention:

> The integration of user specified terminological information into a built-in knowledge base has application for use in specific domains. For example, an English language newspaper in India may buy a natural language

> processing system (*e.g.*, Oracle ConText) to provide search capability for their on-line edition. However, the newspaper may find that the built-in knowledge base has little or no knowledge of Indian politics and economics. For this hypothetical, the user desires to expand the built-in knowledge base to include terminological information on politics and economics. [Specification, page 20, lines 7 – 14.]

The automated integration of new information into a knowledge base is, in itself, a "useful, concrete and tangible result" and the Specification describes a useful purpose that produces a tangible result from the claimed invention. As such, the Examiner has not met the prima facie burden of establishing that the claimed invention as a whole is directed to solely an abstract idea or to manipulation of abstract ideas (as required by MPEP 2106). Applicant submits that the conclusory statement given by the Examiner (that since the term "terminology information" may include abstract information, the claims therefore only recite mere manipulations of abstract information), without any support given for this conclusion, simply does not meet the prima facie burden placed on the Examiner.

According, taken as a whole, the claims of the present invention are of statutory subject matter.

B. Rejection of the Claims Under 35 U.S.C. § 112, First Paragraph is Improper

Claims 16-34 were rejected under 35 USC § 112, First Paragraph, due to the rejection under 35 USC § 101. As stated in the reasons given above, Applicant submits that the rejection under 35 USC § 101 is improper. Also, Applicant has provided sufficient disclosure to one of ordinary skill in the art to practice the invention without undue experimentation. The disclosure includes detailed flow charts, textual description, and examples of the claimed invention. As such, the specification and drawings provide an enabling disclosure for the claimed invention. Therefore, Applicant also

submits that the rejection under 35 USC § 112, First Paragraph, is improper.

C. Rejection of Claim 16 For Statutory Type Double Patenting is Improper

Claim 16 was rejected for statutory type double patenting in view of claim 1 of US Patent 6,654,731. Claim 1 of US Patent 6,654,731 (referred to hereinafter as claim 1) recites, "A computer implemented method for automating integration of terminological information into a knowledge base." The method includes:

> receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies linguistic or semantic relationships among at least two of said input terms;
>
> storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict linguistic and semantic relationships among said nodes, each node representing a term, wherein linguistic associations include associations between at least two terms where a term representing a child node is a type of a term representing a parent node, and semantic associations include associations between at least two nodes, although generally associated together, a node representing a child node is not a type of a concept representing a parent node;
>
> parsing said input terminology information to generate a logical structure that depicts linguistic or semantic relationships among said input terms in a format compatible with said knowledge base;
>
> determining whether at least one input term exists as a node in said knowledge base;
>
> generating a new and independent ontology for said knowledge base comprising said logical structure of said linguistic or semantic relationships if none of said input terms exist as nodes in said knowledge base; and
>
> extending said knowledge base by storing data that logically couples said logical structure of said linguistic or semantic relationships to a node that matches an input term.
>
> [Emphasis added.]

The underlined portions shown above in claim 1 highlight the differences between claim 1 and claim 16 of the subject application. As shown above, claim 1 relates to linguistic or semantic relationships among input terms, whereas claim 16 of the subject application relates to ontological

relationships among input terms. Further, claim 1 includes the "child/parent node" limitation (shown underlined above) which claim 16 does not.

In response to Applicant's argument in the 10/14/2004 Response that claim 16 of the present application and claim 1 are not coextensive in scope, the Examiner argued that "linguistic relationships" and "semantic relationships" are both subsets of "ontological relationships." (Page 13 of the Final Office Action.) The Examiner then concluded that "the new term completely recaptures the previously patent material."

In essence, the Examiner is arguing that claim 16 of the present application is broader than claim 1 because the claim 16 term "ontological relationships" reads on the claim 1 terms "linguistic relationships" and "semantic relationships." Applicant contends that the issue for statutory type double patenting is not whether the claim at issue reads on the disclosure of a prior issued claim, but whether the claim recites the same limitations. The fact that "linguistic relationships" and "semantic relationships" are both subsets of "ontological relationships" is irrelevant.

MPEP 804 states:

> In determining whether a statutory basis for a double patenting rejection exists, the question to be asked is: Is the same invention being claimed twice? 35 U.S.C. 101 prevents two patents from issuing on the same invention. "Same invention" means identical subject matter. *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1984); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970)...
>
> A reliable test for double patenting under 35 U.S.C. 101 is whether a claim in the application could be literally infringed without literally infringing a corresponding claim in the patent. *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970). Is there an embodiment of the invention that falls within the scope of one claim, but not the other? If there is such an embodiment, then identical subject matter is not defined by both claims and statutory double patenting would not exist.
>
> [Emphasis added.]

Claim 16 differ and is broader in scope than claim 1 because 1) the "ontological

relationships" of claim 16 are broader in scope than the "linguistic and semantic relationships" of claim 1 (as the Examiner agreed in the Final Office Action), and 2) claim 1 contains the additional "child/parent node" limitation. As such, claims 1 and 16 are not identical subject matter. Further, the test for double patenting under 35 U.S.C. 101 (as specified in MPEP 804) is not met since claim 16 encompasses at least one embodiment that is not within the scope of claim 1 (since claim 16 is broader than claim 1, this is true by definition). For example, claim 16 may relate to "ontological relationships" that are not "linguistic and semantic relationships," and thus encompasses an embodiment that is not within the scope of claim 1.

For the above reasons, Applicant submits that claim 16 of the present application and claim 1 of US Patent 6,654,731 are not the same invention having identical subject matter, and therefore the rejection for statutory type double patenting should be removed.

VIII. APPENDIX A – CLAIMS ON APPEAL

See Appendix A attached.

IX. APPENDIX B – EVIDENCE

See Appendix B attached.

X. APPENDIX C – RELATED PROCEEDINGS

See Appendix C attached.

CONCLUSION

For the foregoing reasons, the claims on appeal are believed to be patentable and in condition for allowance. Applicant hereby requests that the Board overturn the Examiner's rejections of the claims.

Respectfully submitted,

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Dated: 12/7/06

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APPENDIX A

The following claims are the subject of this Appeal.

16. A computer implemented method for automating integration of terminological information into a knowledge base, said method comprising the steps of:

receiving, into a computer, input terminology information comprising a plurality of input terms and information that specifies ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes hierarchically arranged to depict ontological relationships among said nodes, each node representing a term;

parsing said input terminology information to generate a logical structure that depicts ontological relationships among said input terms in a format compatible with said knowledge base;

determining whether at least one input term exists as a node in said knowledge base;

generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships if none of said input terms exist as nodes in said knowledge base; and

extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term.

17. A computer implemented method for automating integration of terminological information into a knowledge base, said method comprising the steps of:

receiving, into a computer, input terminology information comprising a plurality of input terms and relationship information about at least two of said input terms, said relationship

information specifying ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base;

generating a logical structure from said relationship information, said input terms and said mapping that depicts ontological relationships among said input terms; and

integrating said logical structure of said input terms into said knowledge base.

18. The method as set forth in claim 17, wherein integrating said logical structure of said input terms into said knowledge base comprises:

determining whether at least one input term exists as a node in said knowledge base;

if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term; and

if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships.

19. The method as set forth in claim 18, further comprising:

determining whether an input term that matches a node in said knowledge base connotes a different meaning than said term associated with a node;

if so, then:

deleting said node from its existing one or more associations;

logically coupling any hierarchical associations, if any, with said node so as to by pass said node deleted;

generating a new node for said input term; and

integrating said new node into said knowledge base based on ontological relationships with associated nodes.

20. The method as set forth in claim 17, further comprising generating alternate forms for said input terms prior to integrating said logical structure of said input terms into said knowledge base.

21. The method as set forth in claim 17, wherein receiving information that specifies ontological relationships among at least two of said input terms comprises receiving information in an ISO 2788 format.

22. The method as set forth in claim 17, wherein:

receiving input terminology information comprises receiving broader term ("BT") and narrower term ("NT") relationships among two input terms;

storing a knowledge base comprising associations among said nodes that depict ontological relationships among respective terms comprises storing categories hierarchically arranged to include parent – child relationships and child – parent relationships among categories related hierarchically;

mapping said relationship information comprises mapping BT relationships to parent – child

relationships among categories in said knowledge base and comprises mapping NT relationships to child – parent relationships among categories in said knowledge base; and

generating a logical structure comprises generating a parent – child relationship between two terms comprising a BT relationship in said input terminological information, and generating a child-parent relationship between two terms comprising a narrower term (NT) relationship in said input terminological information.

23. The method as set forth in claim 17, wherein:

receiving input terminology information comprises receiving synonym relationships between two terms;

storing a knowledge base comprising associations among said nodes that depict ontological relationships among respective terms comprises storing cross reference associations between nodes;

mapping said relationship information comprises mapping synonym relationships between two terms to cross reference associations between nodes; and

generating a logical structure comprises generating a cross reference association between two terms comprising a synonym relationship in said input terminological information.

24. The method as set forth in claim 17, wherein:

receiving input terminology information comprises receiving related term ("RT") relationships among at least two input terms;

storing a knowledge base comprising associations among said nodes that depict ontological relationships among respective terms comprises storing cross reference associations between nodes;

mapping said relationship information comprises mapping RT relationships between two

terms to cross reference associations between nodes; and

generating a logical structure comprises generating a cross reference association between two terms comprising a RT relationship in said input terminological information.

25. The method as set forth in claim 17, wherein:

receiving input terminology information comprises receiving preferred term ("PT") relationships among at least two input terms;

storing a knowledge base comprises storing a canonical/alternate form index that indexes a canonical form from one or more alternative forms; and

generating a logical structure comprises generating a canonical/alternate form index between terms comprising a preferred term (PT) relationship in said input terminological information.

26. A computer readable medium comprising a set of instructions, which when executed, cause the computer to perform the steps of:

receiving, into a computer, input terminology information comprising a plurality of input terms and relationship information about at least two of said input terms, said relationship information specifying ontological relationships among at least two of said input terms;

storing, in said computer, a knowledge base comprising a plurality of ontologies, each one of said ontologies comprising a plurality of nodes, each node representing a term, and comprising associations among said nodes that depict ontological relationships among respective terms;

storing a mapping of said relationship information in a format compatible with said ontological relationships depicted in said knowledge base;

generating a logical structure from said relationship information, said input terms and said mapping that depicts ontological relationships among said input terms; and

integrating said logical structure of said input terms into said knowledge base.

27. The computer readable medium as set forth in claim 26, wherein integrating said logical structure of said input terms into said knowledge base comprises:

determining whether at least one input term exists as a node in said knowledge base;

if so, extending said knowledge base by storing data that logically couples said logical structure of said ontological relationships to a node that matches an input term; and

if not, generating a new and independent ontology for said knowledge base comprising said logical structure of said ontological relationships.

28. The computer readable medium as set forth in claim 27, further comprising:

determining whether an input term that matches a node in said knowledge base connotes a different meaning than said term associated with a node;

if so, then:

deleting said node from its existing one or more associations;

logically coupling any hierarchical associations, if any, with said node so as to by pass said node deleted;

generating a new node for said input term; and

integrating said new node into said knowledge base based on ontological relationships with associated nodes.

29. The computer readable medium as set forth in claim 26, further comprising generating alternate forms for said input terms prior to integrating said logical structure of said input terms into said knowledge base.

30. The computer readable medium as set forth in claim 26, wherein receiving information that specifies ontological relationships among at least two of said input terms comprises receiving information in an ISO 2788 format.

31. The computer readable medium as set forth in claim 26, wherein:

receiving input terminology information comprises receiving broader term ("BT") and narrower term ("NT") relationships among two input terms;

storing a knowledge base comprising associations among said nodes that depict ontological relationships among respective terms comprises storing categories hierarchically arranged to include parent – child relationships and child – parent relationships among categories related hierarchically;

mapping said relationship information comprises mapping BT relationships to parent – child relationships among categories in said knowledge base and comprises mapping NT relationships to child – parent relationships among categories in said knowledge base; and

generating a logical structure comprises generating a parent – child relationship between two terms comprising a BT relationship in said input terminological information, and generating a child-parent relationship between two terms comprising a narrower term (NT) relationship in said input terminological information.

32. The computer readable medium as set forth in claim 26, wherein:

receiving input terminology information comprises receiving synonym relationships between two terms;

storing a knowledge base comprising associations among said nodes that depict ontological relationships among respective terms comprises storing cross reference associations between nodes;

mapping said relationship information comprises mapping synonym relationships between two terms to cross reference associations between nodes; and

generating a logical structure comprises generating a cross reference association between two terms comprising a synonym relationship in said input terminological information.

33. The computer readable medium as set forth in claim 26, wherein:

receiving input terminology information comprises receiving related term ("RT") relationships among at least two input terms;

storing a knowledge base comprising associations among said nodes that depict ontological relationships among respective terms comprises storing cross reference associations between nodes;

mapping said relationship information comprises mapping RT relationships between two terms to cross reference associations between nodes; and

generating a logical structure comprises generating a cross reference association between two terms comprising a RT relationship in said input terminological information.

34. The computer readable medium as set forth in claim 26, wherein:

receiving input terminology information comprises receiving preferred term ("PT") relationships among at least two input terms;

storing a knowledge base comprises storing a canonical/alternate form index that indexes a canonical form from one or more alternative forms; and

generating a logical structure comprises generating a canonical/alternate form index between terms comprising a preferred term (PT) relationship in said input terminological information.

APPENDIX B

NONE.

APPENDIX C

NONE.